AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Clean Water Act, as amended, (33 U.S.C. §§1251 et seq.; the "CWA"),

Town of Durham New Hampshire

is authorized to discharge from the Wastewater Treatment Plant located at

100 Piscataqua Road
Durham, New Hampshire

to receiving water named

Oyster River (Hydrologic Unit Code 01060003)

in accordance with effluent limitations, monitoring requirements and other conditions set forth herein.

This permit shall become effective 45 days after date of signature.

This permit and the authorization to discharge expires at midnight, five (5) years from the effective date.

This permit supersedes the permit issued on September 28, 1990.

This permit consists of 11 pages in Part I including effluent limitations and monitoring requirements, 6 pages in Attachment A, Marine Acute Toxicity Test; 9 pages in Attachment B, Marine Chronic Toxicity Test; 48 pages in Sludge Compliance Guidance, and 35 pages in Part II including General Conditions and Definitions.

Signed this 15th day of December, 1999

/Signature on file/

Linda M. Murphy, Director

Office of Ecosystem Protection
U.S. Environmental Protection Agency (EPA)
Region I
Boston, Massachusetts

EXPLANATION OF SUPERSCRIPTS TO PART I.A.1 on page 2:

(1) The effluent flow shall be continuously measured and recorded using a flow meter and totalizer.

(2) Influent concentrations of both BOD_5 and TSS shall be monitored 2 days/Month and reported as average monthly values.

(3) State certification requirement.

(4) Fecal Coliform shall be tested using test method 9222 D or 9221 C E found in Standard Methods for the Examination of Water and Wastewater, 18th or subsequent Edition(s), as approved in 40 CFR Part 136. The permittee may use 9222 D in lieu of 9221 C E after it has been demonstrated to the satisfaction of the NHDES-WD that method 9222 D generates comparable results, as per Standard Methods 9222 D.

The Average Monthly and Average Weekly values for Fecal Coliform shall be determined by calculating the geometric mean and the results reported. Not more than 10 percent of the collected samples (over a monthly period) shall exceed a Most Probable Number (MPN) of 43 per 100 ml for a 5-tube decimal dilution test. Furthermore, all Fecal Coliform data collected must be submitted with the Monthly Discharge Monitoring Reports (DMRs).

(5) Total Residual Chlorine shall be measured using any one of the following three methods listed below: in a. through c.:

a. Low level amperometric titration, using a chart recorder if possible. Standard Methods [18th or subsequent Edition(s),as approved in 40 CFR Part 136], no. 4500-Cl E.

b. DPD spectrophotometric (colorimetric), using a longer cell (e.g. 5 cm. to 10 cm.) if possible. EPA no. 330.5 or Standard Methods [18th or subsequent Edition(s), as approved in 40 CFR Part 136], no. 4500-Cl G.

c. Hach Ultra Low Range Spectrophotometric Method No.10014 Revision 1, dated 10/8/96 (version of Method 4500-Cl G).

(6) The limit at which compliance/noncompliance determinations for Total Residual Chlorine (TRC) will be based is the Minimum Level (ML). For this Permit, the ML is defined as 0.050 mg/L

and this value may be reduced by permit modification as more sensitive test methods are approved by EPA and the State. Any TRC value below 0.050 mg/L shall be reported as zero on the Discharge Monitoring Report (DMR).

(7) The permittee shall conduct acute and chronic toxicity tests on effluent samples using three species, Mysid Shrimp

(Mysidopsis bahia), Inland Silverside (Menidia beryllina), and Sea Urchin (Arbacia punctulata), following the protocols in **Attachment A** (Marine Acute Toxicity Test Procedure and Protocol dated September 1996) and in **Attachment B** (Marine Chronic Toxicity Test Procedure dated September 1996. This test protocol includes the procedure to calculate an LC50 at the end of 48 hours for the Menidia beryllina acute test.) Toxicity test samples shall be collected and tests completed during the 3 month periods ending March 31th, June 30th, September30th, and December 31th, respectively, each year. Toxicity test results are to be submitted by the 15th day of the month following the end of the quarter sampled.

(8) This permit shall be modified, or alternatively, revoked and reissued to incorporate additional toxicity testing requirements, including chemical specific limits, if the results of these toxicity tests indicate the discharge causes an exceedance of any State water-quality criterion. Results from these toxicity tests are considered "New Information" and the permit may be modified as provided in 40 Code of Federal Regulations (CFR) §122.62(a)(2).

(9) LC50 is defined as the percent of effluent (wastewater) that causes mortality to 50 percent of the test organisms. The "100 percent" limit is defined as a sample which is composed of 100 percent effluent (See A.1 on Page 2 of Part 1 and Attachment A and C of Part I). The limit is considered to be a maximum daily limit.

(10) C-NOEC is defined as the chronic no observed effect concentration which is the highest concentration of effluent to which organisms are exposed in a life cycle test which causes no adverse effect on growth, survival, or reproduction. The " 100 % or greater limit " is defined as a sample which is composed of 100 percent effluent. (See A.1 on Page 2 of Part

I and Attachments B and C of Part I). The limit is considered to be a maximum daily limit. If the test results do not exhibit a linear dose-response relationship, report the lowest effluent concentration where there is no observable effect.

(11) For each Whole Effluent Toxicity test the permittee shall report on the appropriate Discharge Monitoring Report, (DMR), the concentrations of the Total Recoverable Cadmium, Chromium, Lead, and Nickel found in the 100 percent effluent sample. All these aforementioned chemical parameters shall be determined to have at least the Minimum Quantification Level shown in Attachment A on page A-6, or as amended. Also, the permittee should note that all chemical parameter results must still be reported in the appropriate toxicity report.

(12) The sampling method for metals shall be performed in accordance with the "clean techniques" approach in EPA Method 1669: Sampling Ambient Water for Trace Metals At EPA Water Quality Criteria Levels EPA 821-R-954-034, April 1995 or as amended.

(13) The analytical method for Total Recoverable Copper and Zinc shall be the Furnace AA method with a Minimum Level (ML) of detection at 0.0025 mg/L for both metals. The ML is defined as the concentration in a sample equivalent to the concentration of the lowest calibration standard analyzed in a specific analytical procedure assuming that all the method-specific sample weights, volumes and processing steps have been followed. Analytical values below 0.0025 mg/L shall be reported as zero (non-detect) on the Discharge Monitoring Report (DMR). These ML values may be reduced by permit modification as more sensitive test methods are approved by EPA and the New Hampshire Department of Environmental Services.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS(continued)

2. The discharge shall not cause a violation of the water quality standards of the receiving water.

3. The discharge shall be adequately treated to insure that the surface water remains free from pollutants in concentrations or combinations that settle to form harmful deposits, float as foam, debris, scum or other visible pollutants. It shall be adequately treated to insure that the surface waters remain

free from pollutants which produce odor, color, taste or turbidity in the receiving waters which is not naturally occurring and would render it unsuitable for its designated uses.

4. The permittee's treatment facility shall maintain a minimum of 85 percent removal of both BOD_5 and TSS. The percent removal shall be based on a comparison of average monthly influent versus effluent concentrations.

5. When the effluent discharged for a period of 90 consecutive days exceeds 80 percent of the 2.5 MGD design flow or 2.0 MGD, the permittee shall submit to the permitting authorities a projection of loadings up to the time when the design capacity of the treatment facility will be reached, and a program for maintaining satisfactory treatment levels consistent with approved water quality management plans. Before the design flow will be reached, or whenever treatment necessary to achieve permit limits cannot be assured, the permittee may be required to submit plans for facility improvements.

6. A User may not introduce into any Publicly Owned Treatment Works (POTWs) any pollutant(s) which cause Pass Through or Interference. The terms User, Pass Through and Interference are defined in 40 CFR §403.3

7. All POTWs must provide adequate notice to both EPA and the New Hampshire Department of Environmental Services, Water Division (NHDES-WD) of the following:

   a. Any new introduction of pollutants into the POTW from an indirect discharger in a primary industry category (see 40 CFR §122 Appendix A as amended) discharging process water; and

   b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.

   c. For purposes of this paragraph, adequate notice shall include information on:

      (1) the quantity and quality of effluent introduced

into the POTW; and

(2) any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

8. The permittee shall submit to EPA and NHDES-WD the name of any Industrial User (IU) subject to Categorical Pretreatment Standards under 40 CFR §403.6 and Chapter I, Subchapter N **who commences discharge to the POTW after the effective date of this permit**. This reporting requirement also applies to any other IU that discharges an average of 25,000 gallons per day or more of process wastewater into the POTW (excluding sanitary, noncontact cooling and boiler blowdown wastewater) or contributes a process wastewater which makes up five (5) percent or more of the average dry weather hydraulic or organic capacity of the POTW; or is designated as such by the Control Authority as defined in 40 CFR §403.12(a) on the basis that the industrial user has a reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement (in accordance with 40 CFR §403.8(f)(6)).

9. In the event that the permittee receives reports (baseline monitoring reports, 90-day compliance reports, periodic reports on continued compliance, etc.) from Users subject to

Categorical Pretreatment Standards under 40 CFR §403.6 and 40 CFR Chapter I, Subchapter N, the permittee shall forward all copies of these reports within ninety (90) days of their receipt to EPA and NHDES-WD.

10. The permittee shall not discharge into the receiving water any pollutant or combination of pollutants in toxic amounts.

B. SLUDGE CONDITIONS

1. The permittee shall comply with all existing federal & state laws and regulations that apply to sewage sludge use and disposal practices and with the CWA Section 405(d) technical standards.

2. The permittee shall comply with the more stringent of either the state or federal requirements.

3. The technical standards (Part 503 regulations) apply to facilities which perform one or more of the following use or disposal practices.

   a. Land application - the use of sewage sludge to condition or fertilize the soil.
   b. Surface disposal - the placement of sewage sludge in a sludge only landfill.
   c. Placement of sludge in a municipal solid waste landfill.

4. These conditions do not apply to facilities which transport sewage sludge to another facility for use or disposal. Also, these conditions do not apply to facilities which do not dispose of sewage sludge during the life of the permit but rather treat the sludge (lagoons-reed beds), or are otherwise excluded under 40 CFR 503.6.

5. The permittee shall use and comply with the attached Sludge Compliance Guidance document to determine appropriate conditions. Appropriate conditions contain the following elements.

   General requirements
   Pollutant limitations
   Operational Standards (pathogen reduction requirements and vector attraction reduction requirements)
   Management practices

Record keeping
Monitoring
Reporting

Depending upon the quality of material produced by a facility all conditions may not apply to the facility.

6. The permittee shall monitor the pollutant concentrations, pathogen reduction and vector attraction reduction at the following frequency. This frequency is based upon the volume of sewage sludge generated at the facility in dry metric tons per year.

less than 290	1/year
290 to less than 1,500	1/quarter
1,500 to less than 15,000	6/year
15,000 plus	1/month

7. The permittee shall sample the sewage sludge using the procedures detailed in 40 CFR 503.8.

8. The permittee shall submit an annual report containing the information specified in the Sludge Compliance Guidance. Reports are due annually by February 19th. Reports shall be submitted to the addresses (EPA and NHDES-WD) contained in the reporting section of the permit.

C. MONITORING AND REPORTING

Monitoring results shall be summarized for each calendar month and reported on separate Discharge Monitoring Report Form(s) (DMRs) postmarked no later than the 15th day of the month following the completed reporting period.

Signed and Dated original DMRs and <u>all</u> other reports required herein, shall be submitted to the Director at the following address:

U.S. Environmental Protection Agency
Water Technical Unit (SEW)
P.O. Box 8127
Boston, Massachusetts 02114-8127

Duplicate signed copies of all reports required herein shall be submitted to the State at:

New Hampshire Department of Environmental Services
Water Division
Wastewater Engineering Bureau
6 Hazen Drive, P.O. Box 95
Concord, New Hampshire 03302-0095

D. STATE PERMIT CONDITIONS

1. The permittee shall comply with the following conditions which are included as State Certification requirements.

   a. The pH range of 6.5-8.0 Standard Units (S.U.) must be achieved in the final effluent unless the permittee can

   demonstrate to NHDES-WD: 1) that the range should be widened due to naturally occurring conditions in the receiving water or 2) that the naturally occurring receiving water pH is not significantly altered by the permittee's discharge. The scope of any demonstration project must receive prior approval from NHDES-WD. In no case, shall the above procedure result in pH limits outside of the range of 6.0 to 9.0 S.U., which is the federal effluent limitation guideline regulation for pH for secondary treatment and is found in 40 CFR §133.102(c).

   b. Pursuant to State Law NH RSA 485-A:13 and the New Hampshire Code of Administrative Rules, Env-Ws405.04(b), submission shall be made to the NHDES-WD, of a Discharge Permit Request form by a municipality proposing to accept into its POTW (including sewers and interceptors):

      (1) any increase in industrial wastewater flow, pollutant characteristics or pollutant concentration; or

      (2) any increase in sanitary wastewater flow of 5,000 gallons per day, or more.

   c. The permittee shall not at any time, either alone or in conjunction with any person or persons, cause directly or indirectly the discharge of waste into the said receiving water unless it has been treated in such a manner as will not lower the legislated water quality classification or interfere with the uses assigned to said water by the New Hampshire Legislature (RSA 485-A:12).

d. Any modifications of the Permittee's Sewer Use Ordinance, including local limitations on pollutant concentrations, shall be submitted to the NHDES-WD for approval prior to adoption by the permittee.

e. Within 90 days of the effective date of this permit, the permittee shall submit to NHDES-WD a copy of its current sewer use ordinance and a copy of any other document granting legal authority to issue permits to industries discharging industrial waste to the municipal wastewater treatment plant.

f. Within 120 days of the effective date of this permit, the permittee shall submit to NHDES-WD a current list of all industries discharging industrial waste to the municipal wastewater treatment plant. At a minimum, the list shall indicate the name and address of each industry, along with the following information: production quantity, products manufactured, industrial processes used, chemicals used in processes, existing level of pretreatment, and list of existing discharge permits.

g. Within 270 days of the effective date of this permit, the permittee shall submit to NHDES-WD a copy of discharge permit(s) issued to each industry discharging industrial waste to the municipal wastewater treatment plant. At a minimum, each permit shall contain the following: effective dates; flow and applicable pollutant limits: self-monitoring, reporting, compliance monitoring and inspection provisions; and enforcement criteria. If industrial permitting authority does not exist as of the effective date of this permit, the permittee is requested to submit to the NHDES-WD a proposed plan and implementation schedule for adopting such authority and implementing an industrial permitting system.

2. This NPDES Discharge Permit is issued by the EPA under Federal and State law. Upon final issuance by the EPA, the NHDES-WD may adopt this permit, including all terms and conditions, as a State permit pursuant to RSA 485-A:13.

Each Agency shall have the independent right to enforce the terms and conditions of this Permit. Any modification, suspension or revocation of this Permit shall be effective only with respect to the Agency taking such action, and shall not affect the validity or status of the Permit as issued by the other Agency, unless and until each Agency has concurred

in writing with such modification, suspension or revocation.

3. If chlorine is used for disinfection, a recorder which shall continuously record the chlorine residual prior to dechlorination shall also be provided. The minimum, maximum and average daily residual chlorine values, measured prior to dechlorination, shall be submitted with monthly Discharge Monitoring Reports. Charts from the recorder, showing the continuous chlorine residual shall be maintained by the permittee for a period no less than (5) years.

4. The permittee shall provide immediate notification to the New Hampshire Department of Environmental Services, Watershed Management Bureau in the event of a discharge of raw sewage or bypass of disinfection system.

E. SPECIAL CONDITIONS

Whole Effluent Toxicity Test Frequency Adjustment

The permittee may submit a written request to the EPA requesting a reduction in the frequency (to not less than once per year) of required toxicity testing, after completion of a minimum of the most recent four (4) successive toxicity tests of effluent, all of which must be valid tests and demonstrate compliance with the permit limits for whole effluent toxicity. Until written notice is received by certified mail from the EPA indicating that the Whole Effluent Testing requirement has been changed, the permittee is

required to continue testing at the frequency specified in the respective permit.

pH Limit Adjustment

The permittee may submit a written request to the EPA requesting a change in the permitted pH limit range to be not less restrictive than 6.0 to 9.0 Standard Units found in the applicable national Effluent Limitation Guideline (Secondary Treatment Regulations in 40 CFR Part 133) for this facility. The permittee’s written request must include the State’s letter containing an original signature (no copies). The State’s approval letter shall state that the permittee has demonstrated to the State’s satisfaction that as long as discharges to the receiving water from a specific outfall are within a specific numeric pH range the naturally occurring receiving water pH will be unaltered. That letter must specify for each outfall the associated numeric pH limit range.

Until written notice is received by certified mail from the EPA indicating the pH limit range has been changed, the permittee is required to meet the permitted pH limit range in the respective permit.

F. REOPENER CLAUSE

The effluent limitations in this permit maybe modified to reflect the information and data developed during an investigation of the initial dilution for the existing or alternate outfall location(s) including the establishment of a mixing zone. Results from the Outfall Improvements/Relocation study would be considered “new information” and the permit can be modified in accordance with 40 CFR 122.62(a)(2).

This permit may be modified to incorporate seasonal Ammonia limitations if the Ammonia monitoring results indicate the discharge causes or contributes to an exceedance of the State’s narrative criteria for toxicity or numeric water quality criteria for ammonia in saltwater. Results of the Ammonia monitoring would be considered “new information” and the permit can be modified in accordance with 40 CFR 122.62(a)(2).

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date and lasting through the expiration date, the permittee is authorized to discharge from outfall serial number 001 treated wastewater effluent to the Oyster River. Such discharges shall be limited and monitored by the permittee as specified below. Samples taken in compliance with the monitoring requirements specified below shall be taken at a location that provides a representative analysis of the effluent.

Effluent Characteristic	Discharge Limitations			Monitoring Requirements	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type
Flow; MGD	Report	---	Report	Continuous	Recorder[1]
BOD_5; mg/L (lbs/day)	30(630)	45(940)	50(1,043[3])	2/Week[2]	24-Hour Composite
TSS; mg/L (lbs/day)	30(630)	45(940)	50(1,043[3])	2/Week[2]	24-Hour Composite
pH Range[3]; Standard Units	6.5 to 8.0 (See I.D.1.a.)			1/Day	Grab
Fecal Coliform[3, 4]; Colonies/100 ml	14	14	14	1/Day	Grab
Total Residual Chlorine[5,6]; mg/L	0.013	—	0.022	2/Day	Grab
Total Recoverable Copper[12,13]; mg/L	Report	---	Report	2/Month	Grab
Total Recoverable Zinc[12,13]; mg/L	Report	---	Report	2/Month	Grab
Ammonia Nitrogen as N; mg/L	Report	—	Report	2/Week	24-Hour Composite
Whole Effluent Toxicity					
LC50[7,8,9]; Percent	---	---	100	4/Year	24-Hour Composite
C-NOEC[7,8,10]; Percent	—	—	≥58.8	4/Year	24-Hour Composite
Total Recoverable Cadmium[11]; mg/L	—	—	Report	4/Year	24-Hour Composite
Total Recoverable Chromium[11]; mg/L	—	—	Report	4/Year	24-Hour Composite
Total Recoverable Nickel[11]; mg/L	—	---	Report	4/Year	24-Hour Composite
Total Recoverable Lead[11]; mg/L	---	---	Report	4/Year	24-Hour Composite

See pages 3 to 5 for explanation of superscripts.